2:30

WHAT IS THE COMPARATIVE EFFICACY OF ANTIARRHYTHMIC THERAPY VERSUS THE AICD?

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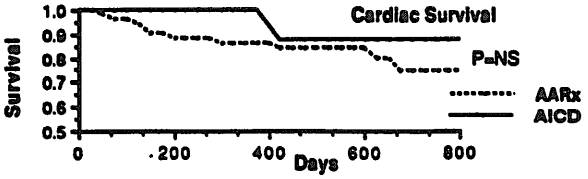
Eighty one consecutive patients (pts) who presented with ventricular tachyarrhythmias (VT) and had sustained VT at baseline electrophysiologic testing were evaluated. Of the 81 pts, 54(67%) were ultimately treated with an antiarrhythmic regimen (AARx) : 33/54 were rendered non-inducible while 21/54 remained inducible with a VT having a cycle length >350 msec which was hemodynamically tolerated. The remaining 26 pts(32%) received an Automatic Implantable Cardioverter-Defibrillator(AICD) because of persistent initiation of nontolerated VT despite serial drug testing.

	Age(yrs)	EF(%)	No. of drug Trials
AARX	64±10	33±14	2.5±1
AICD	67±6*	29±14*	3.2±1

*p=NS compared to AARx

Seventeen of 81 pts(21%) died during a mean follow-up of 16±7 mos. Seven had an AICD. Mortality from any cause at 12, 16, 24 mos for pts treated with AARx and AICD were 13.5, 15.9, 25.4 and 13.1, 29.8, 39.8% respectively, p=NS. Freedom from cardiac mortality is shown :



In summary, there appears to be no significant difference in overall survival or cardiac mortality between pts for whom antiarrhythmic therapy can be defined vs those who receive an AICD. Therefore, serial drug testing remains a viable option for the treatment of pts presenting with ventricular tachyarrhythmias.

3:00

SPECTRAL TEMPORAL MAPPING OF SIGNAL-AVERAGED ECG IS A POWERFUL INDEPENDENT PREDICTOR OF INDUCIBLE VENTRICULAR TACHYCARDIA. A MULTIVARIATE ANALYSIS IN 132 PATIENTS.

Ip JH, Machac J, Winters S, Verdino R, Tepper D, Gomes JA. Mount Sinai Medical Center, New York, NY.

We analysed the predictive value of 5 variables in predicting ventricular tachycardia (VT) induction in 132 patients with coronary artery disease (n=88) or cardiomyopathy (n=44). The variables were: 1. The presenting symptoms- ventricular arrthymia (VA) (sustained or nonsustained VT) or syncopy. 2. Presence of aneurysm (AN), 3. Ejection fraction (EF<30% or EF>30%), 4. Time domain (TD) analysis of the signal averaged (SA) ECG: abnormal if any one or more of the quantitative variables (SA-QRS,LAS,RMS40) were abnormal. Patients with bundle branch block were excluded from TD analysis. 5. Spectral temporal mapping (STM) analysis of the SA ECG. Abnormal STM was defined if the normality factor (NF) was <30 in any one or more of the X,Y,Z leads. Univariate analysis identified VA, EF, AN, TD, STM as predictors of VT induction.

	VA	EF<30	AN	TD	STM
p value	<0.001	0.001	0.04	0.001	<0.0001

Multivariate analysis using stepwise logistic regression identified VA and STM as the only independent predictors of VT inducibility. The probability of having inducible VT in a patient with VA and abnormal STM is 89%. We conclude that STM is a powerful independent predictor of VT inducibility in patients with coronary artery disease and cardiomyopathy.

2:45

LONG TERM EFFICACY AND TOLERANCE OF ORAL SOTALOL IN PATIENTS WITH DRUG-REFRACTORY VENTRICULAR ARRHYTHMIAS

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We prospectively evaluated sotalol, a beta-adrenergic receptor blocking agent with class III antiarrhythmic action, in 162 Pts with drug refractory ventricular arrhythmias. There were 130 men, and 23 women, aged 22-88(mean 61) years. The majority(81%) had coronary artery disease and the mean LV ejection fraction was 40(SD13)%. Clinical arrhythmia was ventricular tachycardia(VT) in 115, ventricular fibrillation (VF) in 29 and nonsustained VT (NSVT) in 18. Sotalol was not used in Pts with uncompensated congestive heart failure, LV ejection fraction < 20% or severe bronchospasm. In 39 of 131 Pts with sustained ventricular arrhythmia induced by programmed stimulation, sotalol suppressed the induced arrhythmia. In another 38, sotalol was selected as the best therapeutic and tolerated antiarrhythmic drug even though VT/VF remained inducible. Seventy-seven Pts were discharged on long term oral sotalol and were followed for a maximum of 5 years, with a mean follow-up duration of 16.3(SD14.2) months. There were 5 sudden deaths, 8 recurrences of non-fatal sustained arrhythmia and 5 Pts had symptomatic NSVT during follow-up. Nine discontinued because of adverse effects. Actuarial life table analysis showed that the arrhythmia-free survival was 90% at 6 months, 79% at 1 year, and 66% at 2 years. Event-free survival at 2 years for Pts with no inducible VT or VF on sotalol was 84%, and for those still inducible on sotalol was 54% (P<0.05). Seventeen of the 29 (59%) Pts with VF at presentation were treated with long term sotalol, with no recurrence of arrhythmia during a mean follow-up of 19.1 (SD 15.3) months.
Conclusion: Sotalol is a well tolerated antiarrhythmic drug and, when inducible VT or VF is suppressed, provides effective long-term therapy, especially for Pts presenting with VF.

3:15

IS ELECTROCARDIOGRAM CHAOS AN INDEPENDENT PREDICTOR OF ELECTROPHYSIOLOGIC INDUCIBILITY?

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Introduction: Although chaotic activity in the pulse rate implies a favorable prognosis, chaotic activity in the ECG voltage has been reported during fibrillation. We hypothesized that patients inducible for ventricular tachycardia (VTach) in electrophysiologic studies might have more ECG voltage chaos than noninducible patients and controls.
Method: We evaluated a new ECG system that detects low levels of chaotic activity in the wide bandwidth (0.5 to 1500 Hz) ECG and reports it as a chaotic activity score (CAS). Patients (15) received the chaos ECG in advance of their EP studies. Age and gender matched controls (9) also received the chaos ECG. The device was unable to calculate a CAS in 5 of the EP patients, possibly due to frequent ectopy; these 5 were then excluded. Of the 10 EP patients with chaos scores, 7 had inducible VTach and 3 did not. Controls were grouped with the non-inducible patients.
Results: Inducible patients had a higher CAS (104.8 ± 19.6 vs 71.1 ± 27.0, p<.01). In a multivariate analysis, the CAS added independent information to histories of myocardial infarction and sustained VTach (p<.01) and increased the correlation (r^2) from 0.74 to 0.90. The 3-variable model had a jack-knifed sensitivity of 86% (6/7) and a specificity of 92% (11/12).
Conclusion: The chaos level in the ECG voltage was an independent predictor of VTach inducibility in this preliminary study and deserves further examination in larger studies.